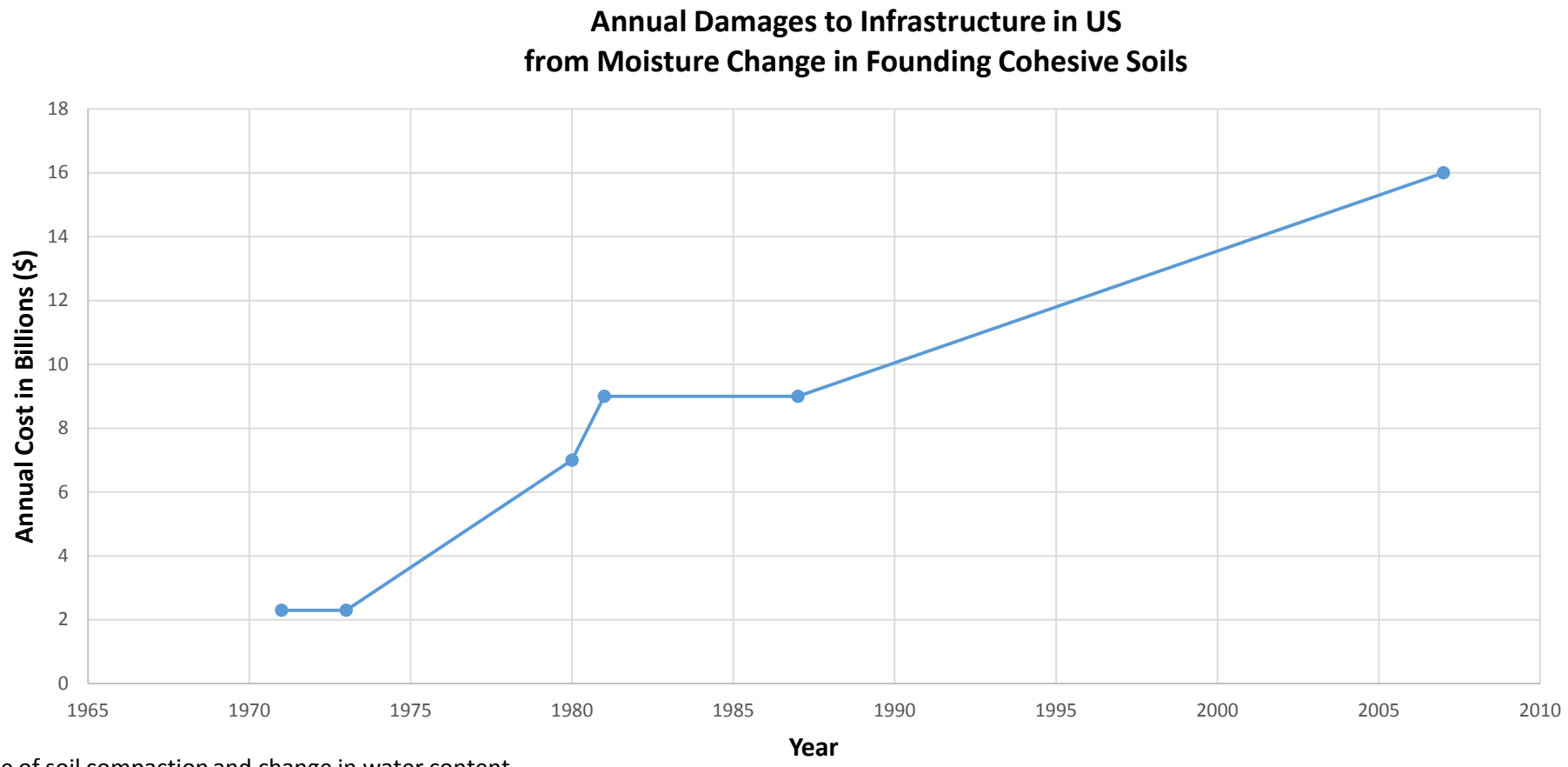
Annual Damages to US Infrastructure Caused by Differential Strength Loss, Settlements & Shrink-Swell of Founding Cohesive Soils

ESOL Solves the Primary Source of this Problem (Read More)



Notes:

- Primary factors are the state of soil compaction and change in water content.
- Problems develop primarily from constructed fills more than underlying natural soils.
- Problems develop from moisture change because compaction standards are not achieved in construction as many assume.
- Primary source of problem is the traditional beliefs and uses of lab test curves as “compaction targets” in fill construction.
- These damages typically exceed the average annual damages caused by floods, hurricanes, earthquakes, and tornados combined.
- Infrastructure includes roads, pavements, small commercial buildings, pipelines, houses, and other facilities and structures.
- In 1973, when $2.3 billion in damages was estimated, $1 billion of that was damages to streets and highways alone.
- In 1980, when $7 billion in damages was estimated, 1/3 of that was attributed to small commercial buildings and family dwellings.
- Sources: FEMA, FHWA, HUD, AGI, TxDOT; ESOL, LLC; University of Oklahoma, University of Texas-Arlington, University of Houston, Robert W. Day, 2006, Jones & Holtz, 1973, Jones & Jones, 1987, Nelson & Miller, 1992, Wray and Meyer, 2004